

## INTEGRATED AMPLIFIER

Integrated tube amplifier. Rated at 28W/8ohm  
Made by: Icon Audio, Leicestershire  
Supplied by: Icon Audio  
Telephone: 0116 2440593  
Web: www.iconaudio.com  
Price: £2299

AUDIO  
FILE

hi-finews  
HIGHLY  
COMMENDED

# Icon Audio Stereo ST30 SE

Icon Audio's new Stereo ST30SE amplifier makes use of beefy KT150 output valves in an effort to overcome the traditionally low power of SE tube amps. Does it succeed?  
Review: Adam Smith Lab: Paul Miller

The single-ended valve amplifier is still something of a niche product. Low power outputs and often equally low damping factors mean that very careful system matching, plus sensitive loudspeakers, are a prerequisite if you are to hear such designs give of their very best. However, the UK's very own guru of all things thermionic, David Shaw of Icon Audio, has decided to address these issues with his £2299 single-ended Stereo ST30SE, an integrated amp having, shall we say, a tad more welly, thanks to it being equipped with KT150 output valves.

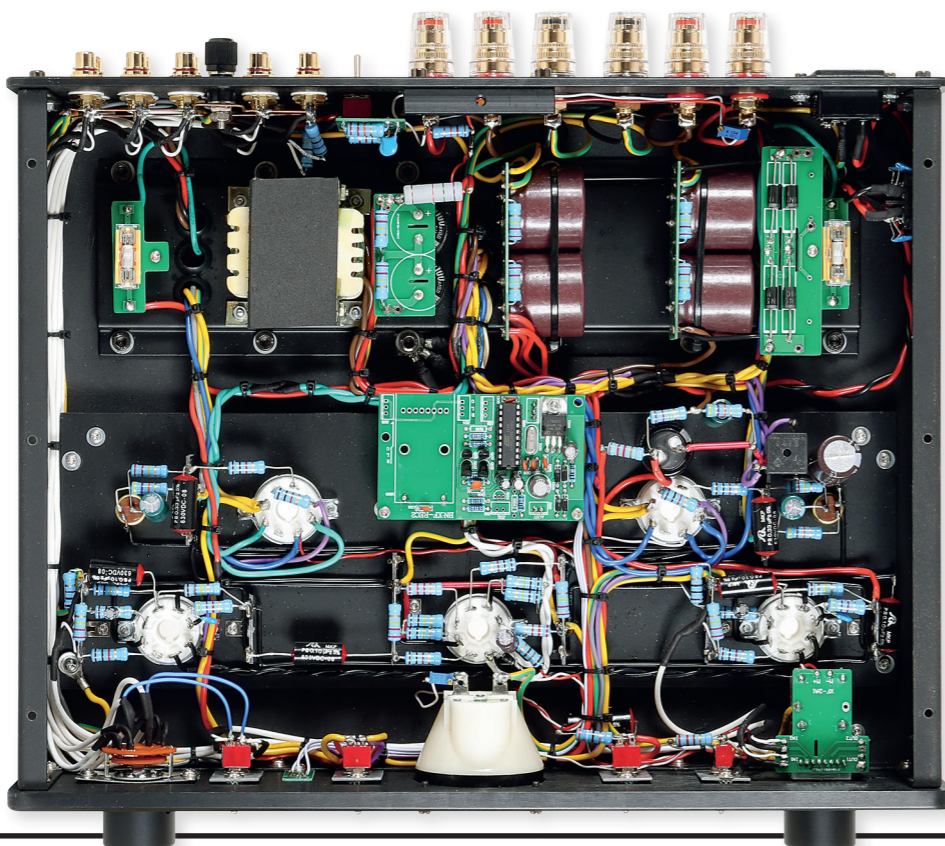
The KT150 is a relative newcomer to the valve scene, though Icon Audio was an early adopter, upgrading its Stereo 60 MkIIIm, MB30SE, MB90 MkIIIm [HFN Mar '14] and MB150 amplifiers with this very tube way back in 2013. A development of the KT88 and KT120 pentodes, it offers higher power, and given that single-ended amplifiers are often built around lower-powered valves such as EL34s or 300Bs, it is something of a surprise that few other designers seem to have thought of using the beefier KT150. The result, Icon Audio claims, is a more 'real-world' power output.

### POTS 'N' PANELS

David Shaw explains that the idea came to him following enquiries from customers for the company to add a further single-ended amplifier to its catalogue. Pondering the idea, he felt that the 8-10W offered by the average 300B triode tube design just wasn't sufficient to do justice to the kind of music he listened to through the loudspeakers he prefers. So he set about designing an amp up to the job.

The result – the compact and stylish Stereo ST30SE – boasts a claimed power output of 28W per channel in Ultralinear mode, and 18W per channel in Triode [see PM's Lab Report, p55]. According to the

**RIGHT:** Point-to-point wiring around the tube bases is a key feature of the ST30SE. The HT PSU rail is derived from a bridge rectifier [far right] filtered by two large banks of reservoir caps [top right] and a good sized choke [top left]



user manual the KT150s themselves are fed by 6SN7 driver valves, though our review sample came fitted with CV181 equivalents bearing David Shaw's name, no less.

Yet while the Stereo ST30SE may appear a straightforward design, albeit one enjoying a healthy dollop of extra power, it's certainly not one stripped of features. There are three line-level inputs, designated CD, Aux and Tuner, plus a tape input with matching record output. The unit is a fixed-bias design and the settings for each output valve can be tweaked via the central front panel meter, with a switch to select which valve is to be checked, and two small trimpots on the top panel. This meter shows signal level when not used for bias purposes but I found it to be rather

insensitive in this role, barely making it above the '20' mark most of the time.

### SENSITIVITY SWITCH

As mentioned, the Stereo ST30SE can be operated in Ultralinear or lower-powered Triode mode [see PM's boxout, p53]. The user manual suggests that most listeners may well prefer the Triode mode, but cautions that the amp may run out of power on this setting while reminding users to resist the urge to change mode

on the fly. Specifically, the amplifier should always be set to standby first in order to avoid stressing the output transformers.

If that isn't enough to play with, then more fun is to be found at the rear of the unit, in the form of a three-position

*'It had joined the party and was getting its groove on'*



**LEFT:** Crowded but familiar fascia sports valve bias toggle and (power) meter, Triode/Ultralinear mode switch, volume rotary, on/standby, tape monitor and input selector knob

sensitivity switch. Select 'H' (High) and the result is that sensitivity is increased with lower feedback applied. Choose 'L' (Low) and the amp uses higher feedback and thus offers lower gain. The 'L' position is recommended for most modern line-level sources where the full range of Icon Audio's volume control is more likely to come into play. Finally, there is a central '0' position where no feedback is applied – this is designated for test purposes only.

Internal construction of the unit is excellent and it is blessed with a fine selection of high-quality components. These include an ALPS volume pot, Rubicon and Nichicon electrolytic capacitors, and SCR audiophile polypropylene audio capacitors. The loudspeaker and input terminals are all gold-plated and the valve bases are high-quality ceramic items.

A machined plastic cover is supplied to keep straying hands and paws away from the valves, although I personally think the unit looks much more striking without it.

### TOP TRUMPS

For the listening, the Stereo ST30SE was connected to a pair of PMC Twenty5.24 loudspeakers [HFN May '17] and fed from a Naim CD5XS/Flatcap XS CD player/PSU combination. Listening to the amp in Triode mode, with the sensitivity set to 'High', I was delighted to hear the Stereo ST30SE pretty much put to rest the idea that single-ended tube amplifiers are all woolly and indistinct-sounding, by serving up a performance that simply

sparkled. Not only was the top-end beautifully transparent but the amp seemed particularly adept at capturing the overall essence of a musical performance, portraying its complete message in a manner that was highly appealing.

Across the midband, instruments were believable and vocals were blessed with good levels of detail, although I did feel that Nicky Holland's voice while performing 'Nobody's Girl' from her 1997 album *Sense And Sensuality* on CD [Epic 487992 2] was a little huskier than I was used to.

There were other niggles with this track too. While the space between the loudspeakers was certainly well filled, there was a feeling that everything was a little lumped together, the result being that I had some trouble zeroing in on the particular elements that make up this recording. Then there was the fact that while the low-end was deep, it could sound a touch turgid at times.

On the upside, however, Holland's vocal was pleasingly centred between the loudspeakers and formed the heart of the overall performance against the gentle wash of keyboards and lilting piano. Clearly there was more to be discovered here and I decided it was time to start flicking some switches.

### DIGGING DEEP

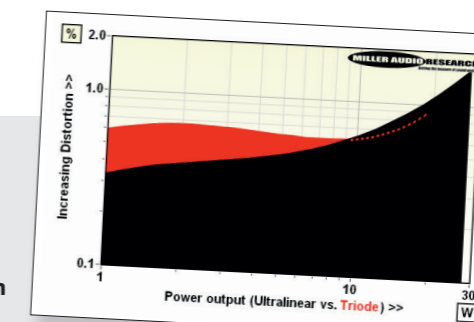
Moving the sensitivity option to 'Low' helped boost the separation of instruments and vocals within the soundstage. Now Miss Holland appeared to have cleared her throat, stepped properly up to the mic and was projecting her voice into the room.

Because of this extra insight and clarity across the midband, there was a clearer feeling of where individual instruments sat in the mix, with the result that performances overall were better marshalled. What's more, this replaced the rather featureless 'whole' that had previously emanated from the

### SINGLE-ENDED MODE

Look closely at our pictures and you'll see the ST30SE has just *one* KT150 pentode tube per channel, rather than employing a pair, as is more typical, in push-pull mode. In these more common tube amplifier designs, a phase-splitter circuit is required to drive the 'push' tube and the 'pull' tube, but while Icon Audio's 'Single-Ended' (SE) mode avoids this – and is necessarily Class A in operation – it is unavoidably compromised in available power output. There's also a further trade-off in power output as its pentodes are switched from Ultralinear to Triode mode – the latter effectively turning the pentode into a triode by connecting the tube's screen to its plate.

So while a pair of KT150s can achieve between 80-120W/8ohm in Ultralinear push-pull mode [HFN Mar '14 and Jan '15], Icon Audio is rating its 'one KT150-per-side' ST30SE at just 28W/8ohm in Ultralinear SE and 18W/8ohm in Triode SE mode [see inset Graph]. But even these relatively low outputs are only possible thanks to the prodigious capacity of the KT150 tube: with only slightly more heater current than the older KT88, it offers nearly double the power output. Avoiding the need for a phase-splitter and tube pair matching is a definite plus for SE operation while Triode mode – here at least – also offers a useful halving of output impedance (better bass control) and few dB reduction in noise. There is no appreciable difference in frequency response, gain or distortion between Triode and Ultralinear modes in this amp, however [see Lab Report, p55]. PM

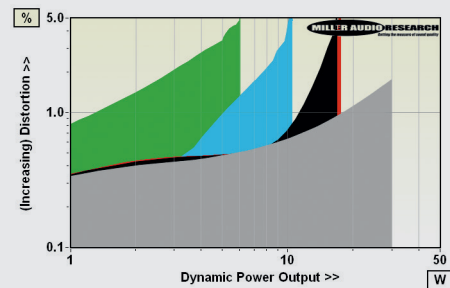


## LAB REPORT

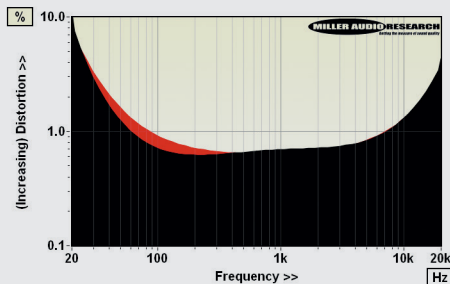
### ICON AUDIO STEREO ST30 SE

While certainly more powerful than the average 300B-based SE tube amp – a clear goal for designer David Shaw – the ST30SE is still not blessed with a prodigious output and remains better suited to high sensitivity (90dB+ re. 2.83V/1m) loudspeakers. Distortion increases with power so the ST30SE's maximum output rather depends on our definition of 'hi-fi' – 17W into 8/4ohm (via the 8 and 4ohm taps) at 1% THD up to 30W into 8/4ohm at 2% THD. There is only a marginal increase to 32W with a further relaxation to 3% THD, but a *reduction* in output to 17-18W into 8/4ohm loads and just 10W/6W into 2/1ohm loads (via the 4ohm tap) under dynamic conditions [see Graph 1, below].

Power output in Triode mode is typically ~60% of that in Ultralinear, the ST30SE achieving 2x22W into 8/4ohm loads at 2% THD. In Ultralinear guise, and with 'Low gain/moderate feedback' selected, the output impedance is 0.85-1.17ohm (20Hz-20kHz), but this falls to 0.47-0.54ohm in Triode mode, improving LF damping. Into 'flat' non-reactive 8 and 4ohm loads the response reaches down to 6Hz and out to 50kHz (-3dB points) but there will be greater variation in the amp/speaker system response in Ultralinear mode because of its higher source impedance. Distortion is slightly *lower* at low power (1-5W) in Ultralinear mode at 0.2-0.5%, but in Triode mode it is more consistent at 0.58-0.62% (all at 1kHz/8ohm). Versus frequency, at 10W/8ohm, the THD trends are very similar indeed [see Graph 2, below]. Finally, there is about 1dB difference in gain between Triode and Ultralinear (+29dB vs. +30dB) but nearly 2dB advantage in A-wtd S/N at 85.1dB vs. 83.4dB, respectively, with any residual hum/flicker noise less than -64dBV. PM



ABOVE: Continuous (grey) and dynamic power output vs. distortion into 8ohm (black), 4ohm (red), 2ohm (blue) and 1ohm (green) loads. Max. current is 2.8A



ABOVE: Distortion vs. frequency, 20Hz-20kHz at 10W/8ohm (black, Ultralinear; red, Triode mode)

### HI-FI NEWS SPECIFICATIONS

Power output (<2% THD, 8/4ohm)	30W / 30W
Dynamic power (<5% THD, 8/4/2/1ohm)	17W / 18W / 10W / 6W
Output imp. (20Hz-20kHz/100kHz)	0.85-1.17ohm / 1.58ohm
Freq. resp. (20Hz-20kHz/100kHz)	+0.0dB to -0.6dB/-9.4dB
Gain (High/Low, Ultralinear mode)	+36.9dB / +30.1dB
A-wtd S/N ratio (re. 0dBW/28W)	83.4dB / 97.9dB (Low Gain)
Distortion (20Hz-20kHz, 10W/8ohm)	0.61-10.9% (Low Gain)
Power consumption (Idle/Rated o/p)	177W / 220W (44W standby)
Dimensions (WHD) / Weight	380x240x300mm / 28kg



ABOVE: Two output transformers [far left/right] have dual secondaries feeding the 4 and 8ohm speaker outlets. Three line ins and a tape loop are included (no phono). The 'H'/'L' toggle offers a choice of High or Low sensitivity (or low/medium feedback)

loudspeakers, even if I still felt that the amplifier was not yet shining quite a bold enough spotlight on individual instruments.

Switching to Ultralinear mode, the Stereo ST30SE offered another step forward in sound quality. Yes, a little of the exquisite midband richness was lost compared to the Triode mode but, more importantly, there was now a far better sense that the bass belonged with the rest of the music. Ultimate detail was still a little short of the best but the amp still dug deep into 'Tilted' from Christine And The Queens' *Chaleur Humaine* CD [Because Music BEC5156406] and bass notes no longer outstayed their welcome. Instead there was a feeling that the Stereo ST30SE had joined the party and was getting its groove on.

### SWEET CLARITY

Moving on to experiment with both 'H' and 'L' gain options in Ultralinear mode showed they had a lesser effect than when used in Triode mode although the 'L' option was still preferable in my system. Indeed, I felt that the Ultralinear/Low gain

mode showed the ST30SE at its best, the amp now able to generate a more realistic soundstage enabling me to either focus on particular instruments, or simply sit back

LEFT: Icon Audio's solid little handset offers control over volume (including mute) but input selection is via the fascia control only



and enjoy the performance as a whole. Now, listening to jazz singer Madeleine Peyroux's 'Dance Me To The End Of Love' from her album *Careless Love* [Rounder Records 0602498235836], it sounded as if the musicians had spread their chairs across the soundstage, the performance filling the space between my speakers convincingly. I detected that the double-bass still lacked that last ounce of real woody detail, but it felt like the Stereo ST30SE was finally pulling me right into the heart of the action.

However, whichever mode I selected, the one thing that made this amplifier such an enjoyable loyal companion was its unwavering treble performance. Throughout the switching, fiddling and evaluating, the top end remained blissfully open, sweet and detailed, having an almost see-through clarity that rewarded with whatever genre of music you cared to play.

Transparent to a tee, yet with never a hint of hardness or trace of an exaggerated sibilant, the presentation up top ensured that this is one single-ended amplifier that stands out from the crowd. ⚡

### HI-FI NEWS VERDICT

There is sure to be something to please the majority of listeners in one of the Icon Audio Stereo ST30SE's various modes. While its bass is not as surefooted as many other amplifiers at the price, it has a glorious transparency and always gives the sense that it is being faithful to the message of the melody at hand. If your musical taste hits its sweet spots, you will find that what it does well, it does very well indeed.

Sound Quality: 80%

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